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WESTERMAN, HATTORI, DANIELS & ADRIAN, LLP
1250 CONNECTICUT AVENUE, NW
SUITE 700
WASHINGTON, DC 20036

EXAMINER

CHANKONG, DOHM

| ART UNIT | PAPER NUMBER |
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2152

DATE MAILED: 09/19/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/891,387

Applicant(s)

TAKASHIMIZU ET AL.

Examiner

Dohm Chankong

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 11 August 2006.
- 2a) ☐ This action is FINAL. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-5, 7-9 and 12-19 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-5, 7-9 and 12-19 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

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DETAILED ACTION

1> This action is in response to Applicant's request for continued examination. Claims 1, 15 and 17 are amended. Claims 1-5, 7-9 and 12-19 are presented for further examination.

2> This is a non-final rejection.

Continued Examination Under 37 CFR 1.114

3> A request for continued examination under 37 CFR 1.114, including the fee set forth in 37 CFR 1.17(e), was filed in this application after final rejection. Since this application is eligible for continued examination under 37 CFR 1.114, and the fee set forth in 37 CFR 1.17(e) has been timely paid, the finality of the previous Office action has been withdrawn pursuant to 37 CFR 1.114. Applicant's submission filed on 8.11.2006 has been entered.

Response to Arguments

4> Applicant's arguments with respect to claims 1-5, 7-9 and 12-19 have been considered but are moot in view of the new ground(s) of rejection.

Claim Rejections - 35 USC § 112

The following is a quotation of the first paragraph of 35 U.S.C. 112:

The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

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5> Claims 1-5, 7-9 and 12-19 are rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the written description requirement. The claim(s) contains subject matter which was not described in the specification in such a way as to reasonably convey to one skilled in the relevant art that the inventor(s), at the time the application was filed, had possession of the claimed invention.

The first paragraph of 35 U.S.C. 112 requires that the "specification shall contain a written description of the invention". MPEP §2163(I). To satisfy the written description requirement, a patent specification must describe the claimed invention in sufficient detail that one skilled in the art can reasonably conclude that the inventor had possession of the claimed invention. Id.

Here, Applicant's specification does not described the features disclosed in the claims as amended. Applicant amends independent claims to now state that the second basic unit sets only the same network address as that of a first basic unit. This is strong language that limits the second basic unit to having only one network address. It should be noted that the first basic unit is not so limited and can be interpreted as having more than one peculiar network address.

The Office could not find support in Applicant's specification that the second basic unit is expressly limited to only one network address. Thus, the amendment suffers from §112, first paragraph issues.

The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

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6> Claims 1-5, 7-9 and 12-14 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

a. Specifically, claim 1 is unclear. Claim 1 states: "...stops the basic unit of the present system and switches it to an operation of the basic unit...". It is unclear to what element that the term "it" is meant to refer.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

7> The text of those sections of Title 35, U.S. Code not included in this action can be found in a prior Office action.

8> Claim 1 is rejected under 35 U.S.C § 103(a) as being unpatentable over Mikkonen, in view of in view of Wang, in further view of Ma et al, U.S Patent No. 6,856,691 ["Ma"].

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9> As to claim 1, Mikkonen discloses a relay apparatus which is connected to a host computer through a network and transmits data received from said host computer to a device, comprising:

a first basic unit into which a peculiar network address is set and which performs a relay control between said host computer and said device [Figure 1 «items 100a, 110a» | Figure 2 «items 100, 110, 200»];

a second basic unit into which the same network address as that of said first basic unit is set and which performs a relay control between said host computer and said device [Figure 1 «items 100b, 110e» | Figure 2 «items 100, 110, 200» where : It should be noted that while Mikkonen discloses that the devices have other addresses in addition to the identical IP addresses (and those extra addresses are identical as well), the claim does not exclude this possibility].

Mikkonen does not expressly disclose a common unit nor does he disclose that the second basic unit has *only* the same network address as the first basic unit.

10> It should be noted that Mikkonen discloses that each basic unit contains a unit that performs the desired monitoring operations [Figure 1 «item 120» | column 3 «lines 53-64»]. Specifically, the units make one of said first basic unit and said second basic unit operative as a present system, monitors its status, and when an abnormality is detected during said monitoring operation, stops the basic unit of the present system and switches it to an operation of the basic unit of a standby system [column 2 «lines 37-51» | column 4 «lines 21-37»]. It would have been obvious to one of ordinary skill in the art to separate the monitoring

functionality present within Mikkonen's units into a separate device that performs the same functions as described by Mikkonen since it has been held that separating functionality into distinct devices that had been previously accomplished in a single device involves only routine skill in the art. *Nerwin v. Erlichman* 168 USPQ 177 (1969).

Further, Wang discloses such an embodiment where a common unit is separate from both a first and second basic unit [Figure 1 «item 160» | column 7 «lines 3-22»]. It would have been obvious to one of ordinary skill in the art to implement the monitoring functionality from Mikkonen's network nodes into a separate unit as taught by Wang for the well known advantages provided by a shared unit: centralizing router selection, automatic failover detection and alleviating the responsibility from Mikkonen's network nodes.

11> In regards to the limitation of setting *only* the same network address, Ma discloses assigning a single network address to relay apparatuses (switches) [column 2 «lines 57-65»]. The benefit of assigning a single address to multiple relay apparatuses solves of a problem because:

“assigning an IP address to each and every network device is undesirable, because registering IP addresses with a DNS is both costly and cumbersome, and the number of available IP addresses is limited. Furthermore, configuring each one of the network devices in a network requires considerable time and labor of a network administrator” [column 2 «lines 50-56»].

Thus, it would have been obvious to one of ordinary skill in the art to modify Mikkonen's relay apparatuses so they are assigned only a single address to reduce the costs of the system.

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12> Claims 2-5, 7 and 12 are rejected under 35 U.S.C § 103(a) as being unpatentable over Mikkonen, Ma and Wang, in further view of Ould-Ali et al, U.S Patent No. 5,649,091 ["Ould-Ali"] and Li et al, U.S Patent No. 5,473,599 ["Li"].

13> See non-final rejection, mailed 11.14.2005.

14> Claims 8 and 9 are rejected under Mikkonen, Ma, Ould-Ali, Li and Wang, in further view of AAPA.

15> See non-final rejection, mailed 11.14.2005.

16> Claims 15-17 are rejected under 35 U.S.C § 103(a) as being unpatentable over AAPA, in view of Mikkonen, in further view of Ma.

17> As to claim 15, AAPA discloses: Mikkonen discloses a relay apparatus comprising:
a first basic unit that performs a relay control between a host computer and a device
[see Applicant's drawings & specification, for example, Figures 4, 4a | page 3 «line 21» to page 4 «line 23»]

a second basic unit that performs a relay control between a host computer and the device [see Applicant's drawings & specification, for example, Figures 4, 4a | page 3 «line 21» to page 4 «line 23»]; and

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a common unit that monitors a status of the first basic unit, and switches the first basic unit to the second basic unit when an abnormality is detected in the first basic unit [see Applicant's drawings & specification, for example, Figures 4, 4a | page 3 «line 21» to page 4 «line 23» : disclosed "coaxial switching mechanism"].

AAPA does not expressly disclose that the units have a common network device.

18> As discussed by Applicant, a problem with AAPA is the fact that the basic units have separate network addresses. Mikkonen solves this problem by providing a relay apparatus containing both basic units, each unit assigned common network addresses [Figure 1 | Figure 2 | column 4 «lines 5-20»]. Thus it would have been obvious to one of ordinary skill in the art to modify AAPA's basic units with Mikkonen's teachings such that they are able to share a common address. Such a modification is desirable and advantageous because it provides easier failover capability to devices such that the flow in traffic does not need to be changed as the network address remains the same [see Mikkonen, column 3 «lines 30-44»].

In regards to the limitation of setting *only* the same network address, Ma discloses assigning a single network address to relay apparatuses (switches) [column 2 «lines 57-65»]. The benefit of assigning a single address to multiple relay apparatuses solves of a problem because:

"assigning an IP address to each and every network device is undesirable, because registering IP addresses with a DNS is both costly and cumbersome, and the number of available IP addresses is limited. Furthermore, configuring each one of the network devices in a network requires considerable time and labor of a network administrator" [column 2 «lines 50-56»].

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Thus, it would have been obvious to one of ordinary skill in the art to modify AAPA and Mikkonen's relay apparatuses so they are assigned only a single address to reduce the costs of the system.

19> As to claim 16, AAPA discloses the host computer of the present system and host computer of the standby system are arranged through the network [Applicant's Figure 3], each of the first and second basic units stores each set information of the host computer of the present system and the host computer of the standby system [Applicant's Figures 2A, 2B], the common unit has a host selecting switch which instructs a selection of the host computer of the present system or the host computer of the standby system [Applicant's specification, page 4 «line 24» to page 5 «line 19» : coaxial switching mechanism], and responds a selecting instruction of the host selecting switch in response to the notice of the power-on operation from the first basic unit or the second basic unit [Applicant's specification, page 5 «lines 5-19»]; and

the first basic unit or the second basic unit which received the power-on instruction from the common unit is initialized by the set information of the selected and instructed host computer and starts the relay operation [page 4 «line 1» to page 5 «line 19» : "set information and resource information of the devices" are registered and preserved].

20> As claim 17 does not teach or further define over the previously claimed limitations, it is similarly rejected for at least the same reasons set forth for claim 15.

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21> Claim 18 is rejected under 35 U.S.C § 103(a) as being unpatentable over AAPA, MA and Mikkonen, in further view of Wang.

22> See non-final rejection, mailed 11.14.2005.

23> Claim 19 is rejected under 35 U.S.C § 103(a) as being unpatentable over AAPA, MA and Mikkonen, in further view of Ould-Ali.

24> See non-final rejection, mailed 11.14.2005.

25> Claim 1 is rejected under 35 U.S.C § 103 (a) as being unpatentable over Applicant's admitted prior art ["AAPA"], in view of Lelaure et al, U.S Patent No. 6.640.314 ["Lelaure"].

26> As to claim 1, AAPA discloses a relay apparatus which is connected to a host computer through a network and transmits data received from said host computer to a device, comprising:

a first basic unit performs a relay control between said host computer and said device [Applicant's Figure 4B «item 206-1»];

a second basic unit which performs a relay control between said host computer and said device [Figure 4B «item 206-2»];

a common unit which makes one of said first basic unit and said second basic unit operative as a present system, monitors its status, and when an abnormality is detected

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during said monitoring operation, stops the basic unit of the present system and switches it to an operation of the basic unit of a standby system [Figure 4B | Applicant's specification, page 3 «line 21» to page 5 «line 19»].

AAPA does not disclose that the basic units are in one relay apparatus or that they share the same network address.

27> Lelaure solves AAPA's problems by integrating both basic units into a single relay apparatus and assigning the same network addresses to each basic unit [Figure 3 | column 3 «lines 13-16 and 27-32»]. Lelaure discloses that there are two basic units, or PLCs. One basic unit is a "normal" PLC and is assigned IP address, @IPn. The second basic unit is a "standby" PLC. When the "normal" PLC fails, operations are transferred to the second basic unit, whereby the "standby" PLC becomes "normal" and the IP address @IPn is transferred to this PLC. Thus, only one IP address is utilized.

It would have been obvious to one of ordinary skill in the art to modify AAPA's basic units with Lelaure's teachings such that the basic units are housed in a single relay apparatus and are able to share a single common address. Such a modification is desirable and advantageous because it provides easier failover capability to devices such that the flow in traffic does not need to be changed as the network address remains the same [Lelaure, column 3 «lines 13-16»].

28> Claim 2 is rejected under 35 U.S.C § 103(a) as being unpatentable over AAPA and Lelaure, in further view of Wang et al, U.S Patent No. 6,587,970 ["Wang"].

29> As to claim 2, AAPA discloses:

a host communication control unit which is connected to said host computer and communicates therewith [Figure 4B «item 206-1»];

a device communication control unit which is connected to said device and communicates therewith [Figure 4B «item 210-1»];

a main control unit which performs a relay control for relaying the data received from said host computer to said device [Figure 4B «item 208-1»];

a setting unit which inputs set information necessary for the relay [page 4 «line 24» to page 5 «line 19»]; and

a secondary storing unit which stores resources including said set information, a control program, and character patterns from the host computer [Figure 4B «item 226» | page 4 «line 24» to page 5 «line 19»];

a status monitoring unit which periodically notifies of a self status as a self diagnosis result [page 4 «line 24» to page 5 «line 19»],

a common unit interface which is connected to said first basic unit and said second basic unit and communicates therewith [Figure 4B «item 226» | page 4 «line 24» to page 5 «line 19»];

an abnormality detecting unit which, when the abnormality is detected from a status notice of the basic unit of the present system, instructs a power-off of the basic unit of the present system, thereafter, instructs a power-on of the basic unit of the standby system [page 4 «line 24» to page 5 «line 19»],

AAPA is silent to a common unit address unit using a non-volatile memory which stores a common network address which is used for said first and second basic units nor does he disclose that the unit further transmits the common network address stored in said common unit address unit to said host communication control unit of the basic unit of the standby system, thereby allowing said common network address to be taken over.

30> Lelaure discloses the use of common addresses between the basic units. Further, Wang discloses an abnormality detecting unit which, when the abnormality is detected from a status notice of the basic unit of the present system, instructs a power-off of the basic unit of the present system, thereafter, instructs a power-on of the basic unit of the standby system, and further transmits the common network address stored in said common unit address unit to said host communication control unit of the basic unit of the standby system, thereby allowing said common network address to be taken over [column 8 «lines 15-41» | column 11 «lines 36-62»]. It would have been obvious to one of ordinary skill in the art to combine the teachings of AAPA, Lelaure with Wang to provide an abnormality unit that provides the common address to the basic devices when it is needed. Such a combination improves the failover process because of the shared common addresses between the basic devices.

31> Claim 1 is rejected under 35 U.S.C § 103(a) as being unpatentable over Lelaure, in view of in view of Wang.

32> As to claim 1, Lelaure discloses a relay apparatus which is connected to a host computer through a network and transmits data received from said host computer to a device, comprising:

a first basic unit into which a peculiar network address is set and which performs a relay control between said host computer and said device [Figure 3 «"normal AP-A"» | column 3 «lines 27-32» where : the IP address, @IPn is set];

a second basic unit into which only the same network address as that of said first basic unit is set and which performs a relay control between said host computer and said device [Figure 3 | column 3 «lines 27-32» where : only the same network address, @IPn, is set after the first PLC fails. Thus, the second PLC becomes the new "normal" PLC].

Lelaure does not expressly disclose a common unit.

33> Lelaure discloses making a first basic unit and a second basic unit operative as a present system [column 3 «lines 1-12» : "normal" or "standby"], monitors its status [column 1 «lines 31-49»], and when an abnormality is detected during said monitoring [column 3 «lines 27-32»], stops the basic unit of the present system and switches it to an operation of the basic unit of a standby system [column 3 «lines 1-12»]. Lelaure however does not expressly disclose a common unit that performs such features. Wang discloses an embodiment where a common unit is utilized to make one of said first basic units and said second basic unit operative as a present system [Figure 1 «item 160» | column 7 «lines 3-22»]. It would have been obvious to one of ordinary skill in the art to implement Wang's common unit into Lelaure's invention to perform the monitoring features as already described in Lelaure. One

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would have been motivated to provide such a feature into Lelaure to increase the fault tolerance of Lelaure's system.

34> Claims 2-5, 7 and 12 are rejected under 35 U.S.C § 103(a) as being unpatentable over Lelaure and Wang, in further view of Ould-Ali et al, U.S Patent No. 5,649,091 ["Ould-Ali"] and Li et al, U.S Patent No. 5,473,599 ["Li"].

35> As to claim 2, Lelaure discloses that each of said first and second basic units comprises:

a host communication control unit which is connected to said host computer and communicates therewith [Figure 1];

a device communication control unit which is connected to said device and communicates therewith [Figure 1];

Lelaure does not expressly disclose a main control unit, a setting unit, a secondary storing unit, a status monitoring unit, or a common unit.

36> It should be noted that Lelaure discloses network nodes that act as relay between host devices in one network to devices in another network [see for example, Figure 1]. A main control unit which performs a relay control for relaying the data received from said host computer to said device is thus inherent in Lelaure's nodes. It would have been obvious to one of ordinary skill in the art that Lelaure's nodes would be implemented with a unit that performs a relay operation as the nodes are relay devices.

37> Further, in the same field of invention, Ould-Ali is directed towards a network node with redundant pieces of equipment that share a common logical address. Ould-Ali discloses first and second basic units [see Figure 1 «items BR₂, BR₃»], comprising:

a setting unit which inputs set information necessary for the relay [column 7 «lines 40-67» where : Ould's processor is analogous to a setting unit that retrieves the address information from the connected memory]; and

a secondary storing unit which stores resources including said set information, a control program, and character patterns from the host computer [column 7 «lines 40-67» where : Ould's memory corresponds to a storing unit].

It would have been obvious to one of ordinary skill in the art to modify Mikkonen's network nodes to include the setting unit and memory taught by Ould-Ali. One would have been motivated to incorporate the units and memory into Lelaure to enable storing and setting of IP address of the network nodes' interfaces.

38> Li discloses a status monitoring unit which periodically notifies of a self status as a self diagnosis result [column 8 «lines 35-45»]. Li discloses that such functionality gives warning to other devices in the network allowing for a smoother transition to the backup devices. Therefore, it would have been obvious to one of ordinary skill in the art to modify Lelaure to include Li's status monitoring unit for the stated benefit of providing a smoother transition to the backup network node.

39> In regards to the common unit, Wang discloses:

a common unit interface which is connected to said first basic unit and said second basic unit and communicates therewith [Figure 1 «items 110, 120, 160, 165A, 165B»];

a common unit address unit using a non-volatile memory which stores a common network address which is used for said first and second basic units [column 11 «lines 36-40» | column 11 «line 63» to column 12 «line 10»]; and

an abnormality detecting unit which, when the abnormality is detected from a status notice of the basic unit of the present system, instructs a power-off of the basic unit of the present system, thereafter, instructs a power-on of the basic unit of the standby system, and further transmits the common network address stored in said common unit address unit to said host communication control unit of the basic unit of the standby system, thereby allowing said common network address to be taken over [column 8 «lines 15-41» | column 11 «lines 36-62»].

As previously stated, Lelaure disclosed the functionality of the claimed common unit but did not expressly disclose a common unit. However, Wang provides express teaching for a common unit. Such an implementation provides well known advantages such as centralized control and alleviates monitoring responsibility from the network nodes. Furthermore, implementing Wang's common unit in Lelaure's system would enable a central controller to implement power supply control over the network nodes.

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40> As to claim 3, Lelaure does not disclose a timer which sets a predetermined set time and is reactivated each time a periodic status notice from said basic unit is received and detects abnormality of the basic unit of the present system from time-out of said timer.

41> Lelaure implies an abnormality detecting unit [column 3 «lines 29-32»] but does not explicitly disclose use of a timer.

42> Use of timers to detect problems with network devices are common in the art. Further, Ould-Ali discloses using a timer which sets a predetermined set time and is activated each time a periodic status notice from said basic unit is received and detects abnormality of the basic unit of the present system from time-out of said timer [column 6 «line 60» to column 7 «line 20»]. It would have been obvious to incorporate Ould-Ali's use of a timer into Lelaure's implied abnormality detecting unit to enable a passive means of detecting problems with network nodes. Such an implementation is well known and merely requires routine skill in the art.

43> As to claim 4, Lelaure does not expressly disclose if said common network address cannot be received from said common unit upon activation by a power-on, said host communication control unit of each of said first and second basic units reads out a common network address stored in a self address ROM and sets it.

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44> Ould-Ali discloses if said common network address cannot be received from said common unit upon activation by a power-on, said host communication control unit of each of said first and second basic units reads out a common network address stored in a self-address ROM and sets it [column 7 «lines 40-50»].

It would have been obvious to one of ordinary skill in the art to modify Lelaure's relay apparatus to include the memory functionality taught by Ould-Ali. Such a combination would provide Lelaure with the ability to retrieve IP addresses for his network node interfaces from an alternative location. One would have been motivated to perform such a combination to provide a fault-tolerant way for the network nodes to retrieve their IP addresses.

45> As to claim 5, Lelaure does not explicitly disclose the common unit, or that the first and second basic units having a power control unit.

46> Wang discloses:

said common unit has a processing system selecting switch which selects the basic unit of the present system [Figure 5 | column 18 «lines 7-20» where: the primary host computer is analogous to the basic unit];

said common unit interface instructs a power-off to the basic unit of the present system, and thereafter instructs a power-on to the basic unit selected by said processing system selecting switch in response to a notice of a power-on operation from said first basic unit or said second basic unit [column 16 «line 48» to column 17 «line 13»]; and

each of said first and second basic units has a power control unit which notifies said common unit of the power-on operation at the time of a turn-on operation of a power switch, turns on a self power source when a power-on instruction is received from said common unit, and turns off the self power source when a power-off instruction is received from said common unit [column 8 «lines 15-41» | column 16 «lines 24-32»].

It would have been obvious to one of ordinary skill in the art to incorporate Wang's common unit and power-on/off capabilities into Lelaure's redundancy apparatus to enable detection and failover control in a centralized controller thereby providing automatic switchover capabilities to the backup when the network node interface fails [see Wang – column 8 «lines 38-41»]. Furthermore implementing the common unit in Lelaure's system would enable power supply control over the routers to ensure that they are no longer active on the network.

47> As to claim 7, Lelaure discloses a plurality of devices connected to said device communication control unit of each of said first and second basic units by a common local area network [Figure 2 : equipment].

48> As to claim 12, Lelaure does not explicitly disclose a display or a printer. However such devices are obvious and well known in the art. Lelaure discloses a network connected to the redundant network nodes; it is obvious to one of ordinary skill in the art that the LAN would contain computing and printing devices as they are ubiquitous and even expected in the art.

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49> Claims 8 and 9 are rejected under Lelaure, Ould-Ali, Li and Wang, in further view of AAPA.

50> As to claim 8, Lelaure discloses an apparatus wherein a plurality of devices is individually connected to said device communication control unit of each of said first and second basic units [see claim 7 supra] but does not explicitly disclose that they are connected by coaxial lines through a switching mechanism.

51> AAPA discloses that it is well known in the art to have an apparatus wherein a plurality of devices such as displays and/or printers and the like are individually connected to said device by coaxial lines through a switching mechanism [Figure 4B]. It would have been obvious to one of ordinary skill in the art to incorporate the coaxial lines and switching mechanism taught by the AAPA to increase the connective functionality of Lelaure's apparatus by allowing a wider variety of devices, such as coaxial devices, to be able to connect to his system.

52> As to claim 9, Lelaure does not specifically disclose a coaxial communication control unit which connects a plurality of devices such as displays and/or printers and the like by coaxial lines is connected to said device communication control unit of each of said first and second basic units through a common local area network.

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53> AAPA discloses a coaxial communication control unit which connects a plurality of devices such as displays and/or printers and the like by coaxial lines is connected to said device communication control unit of each of said first and second basic units through a common local area network [Figure 4B «items 212-1 and 212-2»]. It would have been obvious to one of ordinary skill in the art at the time the invention was made to incorporate AAPA's coaxial communication control unit into Lelaure's system to have a central control for the coaxial units that are connected to the apparatus.

54> As to claims 13 and 14, Lelaure does not explicitly disclose a display or a printer. However such devices are obvious and well known in the art. Lelaure discloses a network connected to the redundant network nodes; it is obvious to one of ordinary skill in the art that the LAN would contain computing and printing devices as they are ubiquitous and even expected in the art.

55> Claims 15-17 are rejected under 35 U.S.C § 103(a) as being unpatentable over AAPA, in view of Lelaure.

56> As to claim 15, AAPA discloses a relay apparatus comprising:
a first basic unit that performs a relay control between a host computer and a device
[see Applicant's drawings & specification, for example, Figures 4, 4a | page 3 «line 21» to page 4 «line 23»]

a second basic unit that performs a relay control between a host computer and the device [see Applicant's drawings & specification, for example, Figures 4, 4a | page 3 «line 21» to page 4 «line 23»]; and

a common unit that monitors a status of the first basic unit, and switches the first basic unit to the second basic unit when an abnormality is detected in the first basic unit [see Applicant's drawings & specification, for example, Figures 4, 4a | page 3 «line 21» to page 4 «line 23» : disclosed "coaxial switching mechanism"].

AAPA does not expressly disclose that the units have a common network device.

57> As discussed by Applicant, a problem with AAPA is the fact that the basic units have separate network addresses. [Figure 3 | column 3 «lines 13-16 and 27-32»]. Lelaure discloses that there are two basic units, or PLCs. One basic unit is a "normal" PLC and is assigned IP address, @IPn. The second basic unit is a "standby" PLC. When the "normal" PLC fails, operations are transferred to the second basic unit, whereby the "standby" PLC becomes "normal" and the IP address @IPn is transferred to this PLC. Thus, only one IP address is utilized.

It would have been obvious to one of ordinary skill in the art to modify AAPA's basic units with Lelaure's teachings such that the basic units are housed in a single relay apparatus and are able to share a single common address. Such a modification is desirable and advantageous because it provides easier failover capability to devices such that the flow in traffic does not need to be changed as the network address remains the same [Lelaure, column 3 «lines 13-16»].

58> As to claim 16, AAPA discloses the host computer of the present system and host computer of the standby system are arranged through the network [Applicant's Figure 3], each of the first and second basic units stores each set information of the host computer of the present system and the host computer of the standby system [Applicant's Figures 2A, 2B], the common unit has a host selecting switch which instructs a selection of the host computer of the present system or the host computer of the standby system [Applicant's specification, page 4 «line 24» to page 5 «line 19» : coaxial switching mechanism], and responds a selecting instruction of the host selecting switch in response to the notice of the power-on operation from the first basic unit or the second basic unit [Applicant's specification, page 5 «lines 5-19»]; and

the first basic unit or the second basic unit which received the power-on instruction from the common unit is initialized by the set information of the selected and instructed host computer and starts the relay operation [page 4 «line 1» to page 5 «line 19» : “set information and resource information of the devices” are registered and preserved].

59> As claim 17 does not teach or further define over the previously claimed limitations, it is similarly rejected for at least the same reasons set forth for claim 15.

60> Claim 18 is rejected under 35 U.S.C § 103(a) as being unpatentable over AAPA and Lelaure, in further view of Wang.

61> AAPA and Lelaure disclose a common unit that manages a common network address, but do not disclose that the common unit *provides* the address to the basic units.

62> Wang discloses a common unit address unit using a non-volatile memory which stores a common network address which is used for said first and second basic units [column 11 «lines 36-40» | column 11 «line 63» to column 12 «line 10»]. It would have been obvious to one of ordinary skill in the art to modify AAPA and Lelaure's common unit such that it provided the common network address to the basic units as taught by Wang. Wang teaches such a combination would provide benefits including centralized address control and alleviation of address responsibility from the network nodes.

63> Claim 19 is rejected under 35 U.S.C § 103(a) as being unpatentable over AAPA and Lelaure, in further view of Ould-Ali.

64> AAPA and Lelaure disclose a second basic unit with memory but do not disclose that the second basic unit comprises a memory that stores common address information, and wherein the unit does not receive the common network address from the common unit, the second basic unit reads out the common network address from the memory.

65> Ould-Ali discloses if said common network address cannot be received from said common unit upon activation by a power-on, said host communication control unit of each

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of said first and second basic units reads out a common network address stored in a self-address ROM and sets it [column 7 «lines 40-50»].

It would have been obvious to one of ordinary skill in the art to modify AAPA and Lelaure's relay apparatus to include the memory functionality taught by Ould-Ali. Such a combination would provide AAPA and Lelaure with the ability to retrieve IP addresses for network node interfaces from an alternative location. One would have been motivated to perform such a combination to provide a fault-tolerant way for the network nodes to retrieve their IP addresses.

Conclusion

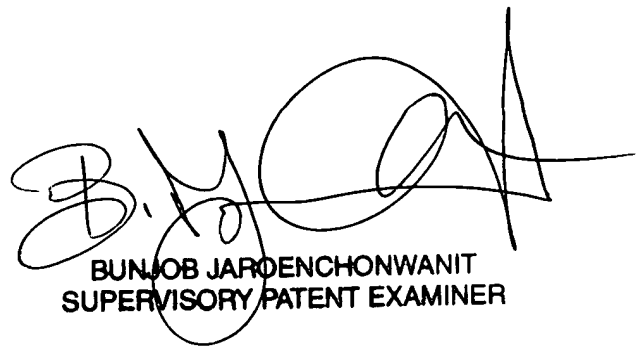
Any inquiry concerning this communication or earlier communications from the examiner should be directed to Dohm Chankong whose telephone number is 571.272.3942. The examiner can normally be reached on Tuesday-Friday [7:30 AM to 4:30 PM].

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Bunjob Jaroenchonwanit can be reached on 571.272.3913. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

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DC



BUNOB JARDENCHONWANIT
SUPERVISORY PATENT EXAMINER